



City of Cañon City

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2016 Annual Program Review

Introduction

In 2003, the City of Cañon City was issued a permit for “Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s)” from the Colorado Department of Public Health and Environment (CDPHE). This permit was renewed in 2008, with little to no change. The 2003 permit required Cañon City to develop, implement and enforce a Colorado Discharge Permit System (CDPS) Stormwater Management Plan. The program had to be designed to reduce the discharge of pollutants from our storm sewer system to the maximum extent practicable to protect the water quality of the Arkansas River and Four Mile Creek and to satisfy the appropriate water quality requirements of the Colorado Water Quality Control Act and Colorado Discharge Permit Regulations. The permit also required that the City of Cañon City do a written annual review of the program and to submit an annual report to the State.

The MS4 discharge permit contained six areas the City must address in its stormwater management plan. These areas were:

- MCM1. Public Education and Outreach on Stormwater Impacts
- MCM2. Public Involvement/Participation
- MCM3. Illicit Discharge Detection and Elimination
- MCM4. Construction Sites Runoff Control
- MCM5. Post-construction Stormwater Management
- MCM6. Pollution Prevention/Good Housekeeping for Municipal Operations.

Each of the six areas has several program elements which have been used to meet the goals of the stormwater management plan.

On April 15, 2016, CDPHE issued a revised “Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s)” permit. The new permit became effective on July 1, 2016. The new permit is structured slightly different than the previous permits and has several new requirements with compliance deadlines to meet. Although the permit structure varies from the previous permits the same six areas are included in the permit requirements. An additional requirement of a Program Description Document is also included in the new permit.

This annual review looks at each of these elements, in both permits, to assess the City of Cañon City’s compliance status and the effectiveness of our programs. The report will include a breakdown of activities completed to meet the requirements of the previous permit which was in effect through June 30, 2016 and activities completed under the new permit which became effective July 1, 2016. For areas that have new requirements and a compliance deadline, the report will summarize what was completed under the previous permit requirements, which is still in effect until the compliance date for the new requirements. The report will also summarize the steps which will be taken to meet the new requirements.

Section 1. Program Description Document (PDD)

The PDD is a new requirement in the permit. To meet this requirement the City of Cañon City’s Stormwater Program must create a document which will describe how all the requirements of the new permit will be met and where any supporting documents, such as ordinances, program element procedures and records will be kept.

The PDD will be a fluid document, kept up-to-date as program elements are modified to meet compliance dates. Once the PDD is completed, prior to the January 1, 2019, deadline, it will be posted to the City of Cañon City's website where it can be viewed and commented on by the public.

Section 2. Public Participation/Involvement

The goal of the Public Participation/Involvement area of our stormwater permit is to provide a method for the public to be involved with the City's stormwater management program by providing feedback through a variety of methods. Assessment of effectiveness in this category is a subjective evaluation as it is difficult to directly track the effect each of these has on public awareness and participation.

The new permit clarifies the public notice, feedback and recordkeeping requirements.

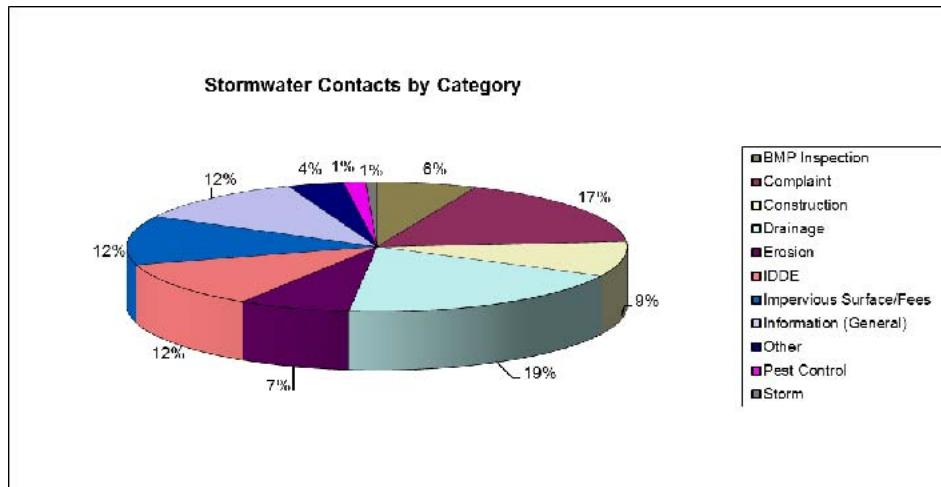
Discussion of Elements: All programs listed were ongoing and will continue to be utilized during 2017. These elements will be addressed in detail in the PDD.

1. Public Notices: The City of Cañon City complies with the Open Meeting act as set forth in Colorado Revised Statutes. All public meetings are posted on a public bulletin board inside City Hall at least 24 hours in advance on any public hearing. A notice is also printed in the local newspaper. Meeting schedules, agendas and minutes are posted on the City of Cañon City's website.

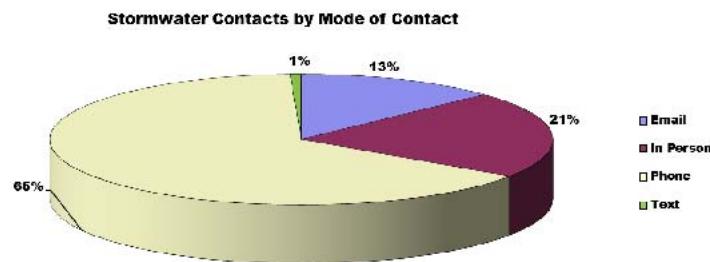
2. Contact Information Availability: Contact information is available through the quarterly newsletters and on the web page. It is also included in any newspaper articles and public service announcements. All City of Cañon City field staff have the Stormwater Technician's direct line in order to report any suspected illicit discharges.

3. Feedback: The quarterly newsletters encourage everyone to get involved by calling, emailing or writing in with their questions, complaints or ideas. A database is kept of contacts (phone, email, letters, "in person" and website report form) concerning stormwater issues with the intent to better track the effectiveness of the public education and outreach programs, as well as to assist in identifying areas and concerns which may need more public outreach. The database also assists in capital project planning. Contacts are broken into categories of issues to facilitate these decisions. The log represents those contacts handled directly by the Stormwater Technician and those handled by other departments that the technician is made aware of. During 2016, 139 contacts were taken by staff. Of those calls, 16 resulted in illicit discharge investigations. The number of contacts and mode of contact are broken into the following categories:

Category	# of Calls	% of Calls
Accident	0	0
BMP Inspection	9	6
Complaint	24	17
Construction	12	9
Drainage	27	19
Erosion	10	7
Illicit Discharge	16	12
Impervious Surface/Fees	17	12
Information (General)	16	12
Other	5	4
Pest Control	2	1
Storm	1	1

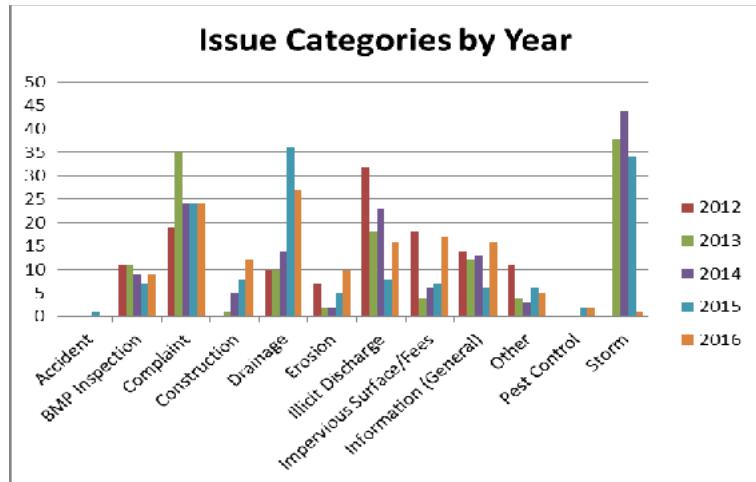


Mode of Contact	Number	%
Email	18	13
In Person	30	21
Phone	90	65
Text	1	1



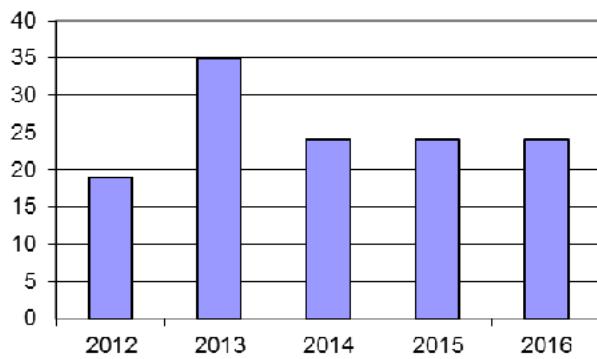
The number of contacts handled in 2016 was slightly less than in 2015 (139 vs 144). The following table and graphs show the number of contacts received in each category for 2012 through 2016. Variability in categories may be attributed to better tracking of the contacts and revisions made since the inception of the database, as well as training for municipal employees and public education and outreach. The Drainage, Erosion, Illicit Discharge and Storm categories are separated from the Complaint category for better tracking of issues, even though some calls in these categories could be considered complaints. Categories for “Accident” and “Pest Control” were added in 2015.

	2012	2013	2014	2015	2016
Accident				1	0
BMP Inspection	11	11	9	7	9
Complaint	19	35	24	24	24
Construction		1	5	8	12
Drainage	10	10	14	36	27
Erosion	7	2	2	5	10
Illicit Discharge	32	18	23	8	16
Impervious Surface/Fees	18	4	6	7	17
Information (General)	14	12	13	6	16
Other	11	4	3	6	5
Pest Control				2	2
Storm		38	44	34	1
Totals	122	135	143	144	139

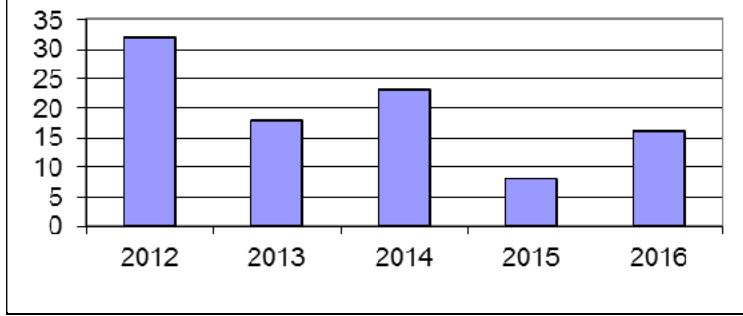


The complaint category covers a variety of issues from blocked flowlines, BMP failure, debris, clogged culverts and inlets, and sediment accumulation to complaints about streets and vegetation. Complaint contacts increased from 2012 to 2013 then declined again in 2014 and have remained fairly level for the last three years. All complaints are addressed as promptly as possible. Contacts resulted in 18 non-illicit discharge field investigations during 2016, which is down from the 49 in 2015.

Complaint Contacts by Year

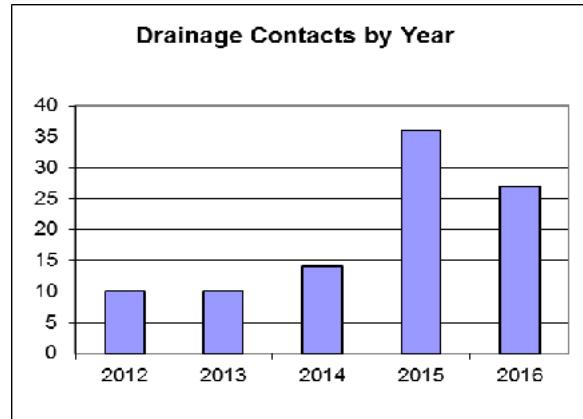
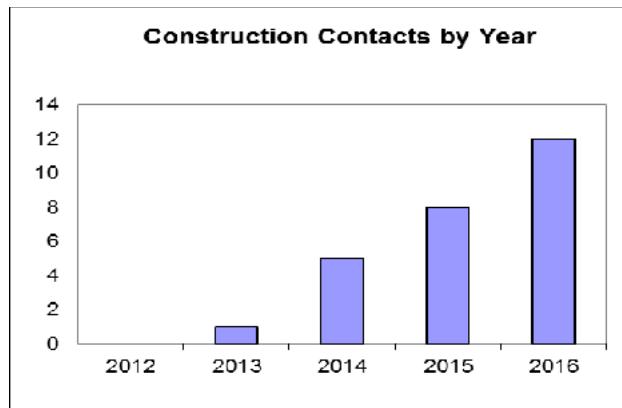


Illicit Discharge Contacts by Year

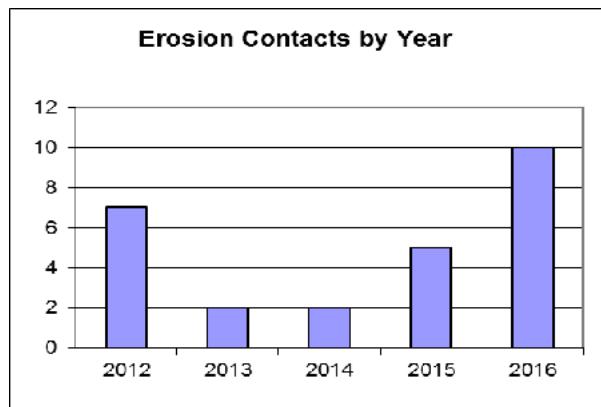


The amount of illicit discharge contacts has varied in the last five years (see above chart), but has shown a general decrease since 2012. (See *Section 4 Illicit Discharge Detection and Elimination*.)

Construction calls have increased over the last five years. These types of calls include both complaints and requests for construction information.



Drainage calls rose dramatically during 2015, and then dropped again in 2016. This could be explained by the amount of precipitation received during the year. The spring of 2015 was exceptionally wet, while 2016 was a drier year.

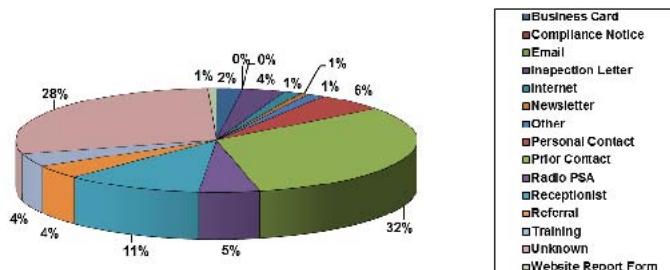


Contacts concerning erosion dropped from 2012 to 2013 then increased again in 2015 and 2016.

Statistical analysis of the data is not done, but the graphs generated from tracking contacts show general trends. Overall, it appears that the Public Outreach efforts of the Stormwater Program have been successful in increasing awareness of stormwater issues and in providing an avenue for the citizens and employees of Cañon City to participate in the program.

The database in CarteGraph also facilitates tracking of other aspects of contacts, such as how the contact information for the Stormwater Program was obtained, in order to determine how effective our outreach efforts are. During 2016 the primary methods of obtaining stormwater contact information were through prior contact, personal contact or via the receptionist. The adjacent chart shows the breakdown. The method of contact is not consistently tracked (i.e. people are not consistently asked how they obtained the information). This is an area that needs strengthened.

Method of Obtaining Stormwater Contact Information



The CarteGraph database is also linked with ArcMap. Complaints and illicit discharge reports are plotted on the map to show areas which may need extra outreach and to assist in prioritizing infrastructure maintenance and capital projects.

Action Items for new permit requirements:

1. Documentation of the City of Cañon City's Public Notice process and a database will be created to maintain copies of any public notices concerning the Stormwater Program and comments received as part of the public notice process. The database will be completed by the January 1, 2019, deadline.
2. The PDD requirements for Public Involvement/Participation will be completed prior to the January 1, 2019 deadline. Once completed, the PDD will be posted on the City's website for public's review and comment.
3. A mechanism will be developed for the public to comment on the PDD and for the City to respond; all comments will be tracked.
4. Requirement I.D.1.c (the ability to accept and respond to information submitted by the public) and I.D.2.c. (maintaining records of information submitted by the public and any actions taken to address the information) have already been met.

Section 3. Public Education and Outreach

The Public Education and Outreach program strives to increase the public's awareness of potential local water quality problems associated with stormwater runoff. Its goal is to give people the information and tools they need to lessen their impact on stormwater runoff, which in turn can improve our local water quality. Assessment of effectiveness in this category is a subjective evaluation as it is difficult to directly track the effect each of these has on public awareness, participation and behavioral changes.

The previous permit listed three requirements:

- 1) Target specific pollutants and pollutant sources which are impacting, or have the potential to impact, the beneficial uses of receiving waters;
- 2) Conduct outreach activities about the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff; and
- 3) Inform businesses and the general public of the municipality's prohibitions against and/or the water quality impacts associated with illegal discharges and improper disposal of waste.

The new permit expands upon these requirements and has added a requirement for education and outreach concerning nutrients in keeping with Regulation #85: Nutrients Management Control Regulation (5 CCR 1002-85).

The following elements were used to meet our permit requirements during 2016.

Discussion of Elements:

1. Forming Partnerships: The City of Cañon City is a member of, or involved in, several councils and associations. The following meetings were attended during 2016:

A. Colorado Stormwater Council (CSC):

i. Cañon City's representative to the CSC was elected to serve as the Chair for the Council during 2016. Nine Administrative Committee meetings were attended via conference calls. Nine general membership meetings were attended; one by conference call.

ii. Seven Legislative Committee meetings were attended by conference call.

B. Urban Drainage and Flood Control District (UDFCD): UDFCD began hosting quarterly meetings with the CDPHE staff again in 2016. Four meetings were attended during the year.

C. The City of Cañon City is a member of the Colorado Association of Stormwater and Floodplain Managers. The annual conference was attended by the City Engineer.

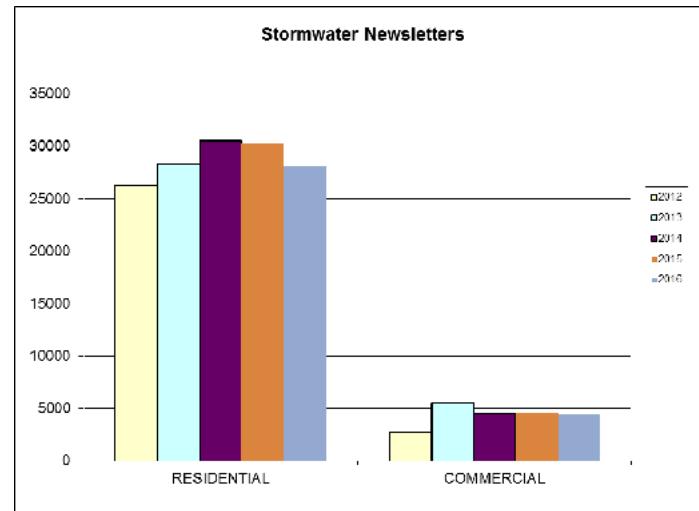
D. Staff also called in to several stakeholder meetings of the Water Quality Control Commission, the Water Quality Control Division and the Colorado Water Congress Water Quality Committee.

E. The City of Cañon City is partnered with the Upper Arkansas Recycling Program and the Cañon Proud Program. The Upper Arkansas Recycling Program received \$13,067 in financial support during 2016. Cañon Proud received \$1,458 in support for its annual city-wide clean-up program, plus \$1200 worth of radio ads.

F. The City of Cañon City partners with the City of Pueblo, Pueblo County Engineering and Public Works Department and the Pueblo West Metro District to host a construction-related stormwater education seminar each year. This year's seminar was held in Pueblo on February 10, 2016. (See Section 5. Construction Sites.)

2. Using Educational Materials and Strategies: All programs listed were utilized during 2016. The new permit contains a table of the Education and Outreach Activities which may be used to meet the permit requirement. The table contains both Passive Outreach and Active/Interactive Outreach. The permittee must implement at least four activities each year and at least two have to be from the Active/Interactive column. The activities can vary each year as long as they meet the requirements. The City of Cañon City's current activities fall into the new activities table.

A. Quarterly stormwater newsletters are sent out with City water bills and are available on the City of Cañon City's website. Each issue addresses stormwater concerns and provides information about the Stormwater Program and the prevention of illicit discharges. The public is encouraged to contact us with their concerns and questions or if they have suggestions for future topics or programs (newsletters include the contact information). There were 28,091 newsletters sent to residents and 4,462 newsletters sent to commercial establishments. The adjacent graph compares the amount of newsletters sent out each year from 2012 through 2016.



B. The City of Cañon City's website was completely updated in 2015. The Stormwater Program's webpages were expanded during the update. The webpages now contain much more information for the public from informational brochures about water quality, illicit discharges and construction stormwater runoff control to children's activity booklets. A fillable form was also added to report a problem or an illicit discharge. Current editions of the newsletters, a citizen's guide on bacteria monitoring and a fact sheet about rain barrels were added in 2016.

C. Demonstrations/presentations are given as requested to local schools, groups and civic organizations. The local grade schools tend to request presentations every other year for their classes (i.e. 3rd – 4th

grades or 4th – 5th grades). Programs are continually evaluated and updated. The following presentations were given in 2016:

- i. Presentations and EnviroScape demonstrations were given at the following schools:
 - a. Lincoln School of Science and Technology – Kindergarten to 3rd grade. May 31, 2016
 - b. McKinley Elementary School 2nd grade. September 27, 2016
- ii. A workshop on the KIC-NET program was held for area school teachers on October 21, 2016. Twenty people attended the workshop. As a result of the workshop, the City of Cañon City Stormwater Program will be working with local middle and high school teachers on environmental programs for the students.

D. Dissemination of industry appropriate stormwater BMP information is done through the quarterly newsletters. (*See Section 3.2.A. above*).

E. Nine 30-second public service announcements concerning stormwater were aired on local radio stations during 2016 for a total air time of 336 minutes (5.6 hours). Four stormwater-related programs were run on CCTV-Channel 19 with a total air time of 510.04 hours. Radio public service announcements are rotated and new ones added throughout the year. Newspaper notices were also run in conjunction with the leaf pick-up program which includes stormwater information.

3. Signage and Stenciling:

In 2010, a program modification was sent to CDPHE changing the Stenciling element from annually stenciling 25 high visibility storm drain inlets utilizing local high school students to maintaining the stencils as needed. In lieu of students stenciling inlets in 2016, permanent stencils were incorporated into fifteen new or replacement storm drain inlets.

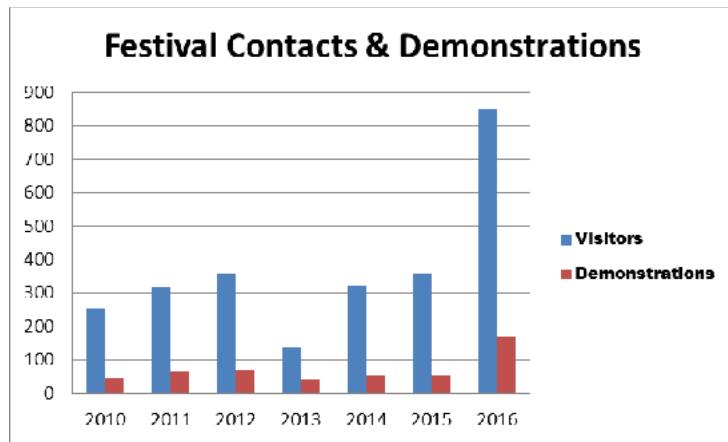
4. Reaching Diverse Audiences: Direct mail, public service announcements, programs and personal contact are all utilized to reach a broad spectrum of our citizens and businesses. A Stormwater Program booth is set up at one or more local festivals. EnviroScape demonstrations, short presentations and giveaways are all available at the booth. The giveaways include items such as information brochures, children's activity books, litter bags, magnets and pet waste baggie dispensers. The number of visitors to the booth and demonstrations are recorded, as are how many items are given out. Programs are evaluated and updated continually in order to reach as many people as possible and to promote interest and participation in the programs. The Stormwater Program had a booth at the following festivals in 2016:

- i. A stormwater information booth was set up during the annual Blossom Craft Fair on May 7th and 8th. Brochures, flyers, magnets, litter bags, and children's activity booklets were distributed. The booth had a total of 450 visitors over the two days of the festival; 68 EnviroScape demonstrations were given.
- ii. A stormwater information table was set up for two hours during the Library Mini-Health Fair on July 14th. Fifty visitors stopped at the table to observe demonstrations and pick up information about the impacts of pollutants on stormwater runoff. Information about rain barrels and children's activity books were also given out. Ten EnviroScape demonstrations were given.
- iii. EnviroScape demonstrations were given during the Cañon City Police Department's National Night Out on August 2nd. The booth had 125 visitors during the event; twenty-one demonstrations were given. Brochures, flyers, magnets, litter bags, and children's activity booklets were also distributed.



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The Stormwater Program began having a booth at the Blossom Festival in 2010. Since then more festivals have been added. The following graph shows the approximate number of visitors and demonstrations given each year. In 2013 the booth was only set up during one day of the Blossom Festival, hence the much lower numbers. For 2015, the booth was not set up at the Blossom Festival, but rather at the parade. No demonstrations were given and the number of visitors was not tracked. Contacts during festivals and other presentations are not recorded in our contact database (*see Section 2. Public Participation/Involvement*) unless a specific complaint is taken.



5. Illicit Discharge Education to Businesses and the Public: The quarterly newsletter often addresses the issue of illicit discharges. It also provides tips for preventing contamination of stormwater runoff.

6. Section I.E.1.iii (A) and (B) of the new permit: Nutrients.

The new permit has the additional requirements of determining targeted sources that are contributing to, or have the potential to contribute nutrients to our receiving waters and to distribute educational materials or equivalent outreach to prioritized target audiences. Information about nutrient impacts is already included in most of the Stormwater Program's brochures and presentations; however more specific messaging will be developed and distributed to the targeted audiences.

Action Items for new permit requirements:

1. Create a list of the targeted business types that are likely to cause an illicit discharge or improperly dispose of waste and list the local businesses under each type. Document the procedures used to create list. This will be completed prior to the July 1, 2018 deadline.

2. Conduct consistent outreach to the targeted businesses and document. This will begin prior to the compliance date of July 1, 2018.
3. Documentation of any signs. Permanent stenciling/markers are already tracked in CarteGraph.
4. Determine targeted sources of nutrients and conduct outreach to prioritized targets. Document procedures and outreach. Targeted source determination will be completed by the deadline of January 1, 2018. Outreach will begin prior to the July 1, 2018 deadline.
5. The PDD requirements for Public Education and Outreach will be completed prior to the January 1, 2019 deadline. Once completed, the PDD will be posted on the City's website for public's review and comment.

Section 4. Illicit Discharge Detection and Elimination

The Illicit Discharge Detection and Elimination (IDDE) program identifies sources of potential illegal discharges and actual discharges to the City's storm sewer system in order to reduce the frequency of these discharges and to protect the water quality of the Arkansas River and Four Mile Creek. Public education and municipal employee training are important elements in this program. Monitoring of the storm sewer discharge pipes (outfalls) on the Arkansas River and Four Mile Creek as well as water quality testing if discharges are found are integral parts of the program.

Discussion of Elements: All programs listed were ongoing and will continue during 2017.

1. Outfall Map: Outfall inspections and mapping of new outfalls continued during 2016. Outfalls are assigned to a category in the CarteGraph database based upon the primary type of flow. Many outfalls, though, will carry several types of flow (i.e. ground water, irrigation return and storm runoff). The categories are Footing/Foundation Drain, Groundwater Drain, Industrial Discharge, Irrigation Return, Major Outfall, Outfall, Outlet and Roof Drain. Prior to 2013 Footing/Foundation Drains and Roof Drains were consolidated into one category. In 2013 these were separated into two categories for more accurate records. A category for Facility Outlets (municipal) was added in 2016 in preparation for new permit requirements. An outfall is the point where a municipal storm sewer discharges to waters of the United States. A major outfall is a pipe with an inside diameter of 36 inches or more or where stormwater enters waters of the United States from a drainage area of more than 50 acres. An outfall pipe with an inside diameter of 12 inches which drains land zoned for industrial activities is also considered a major outfall; these have been separated into the Industrial Discharge category. Outlets are the structural point where BMPs such as detention basins empty to areas other than a waterbody. Footing/Foundation and Roof Drains are only mapped if they discharge directly to a drainage or waterbody. There are a total of 545 outfalls, outlets and other drainage end points located along the Arkansas River, Four Mile Creek and the various drainages and irrigation canals throughout the City. The City of Cañon City has jurisdiction over 241 of them; County or State Agencies have jurisdiction for 14 and 290 are under private jurisdiction. The breakdown for each category as well as the number mapped during 2016 (new and previously identified but unmapped) is detailed in the following table. There is one unclassified outfall on which a drainage investigation needs to be conducted in order to determine which (if any) category it belongs in.

Category	Total Number	Number Mapped in 2016
Facility Outlet	6	0
Footing/Foundation Drain	58	0
Groundwater Drain	32	0
Industrial Discharge	7	0
Irrigation Return	143	10
Major Outfall	23	0
Outfall	188	5
Outlet	50	2

Roof Drain	37	7
Unclassified	1	0

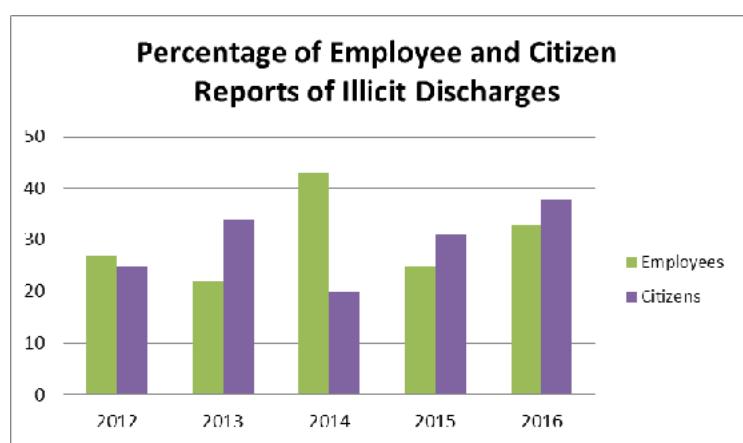
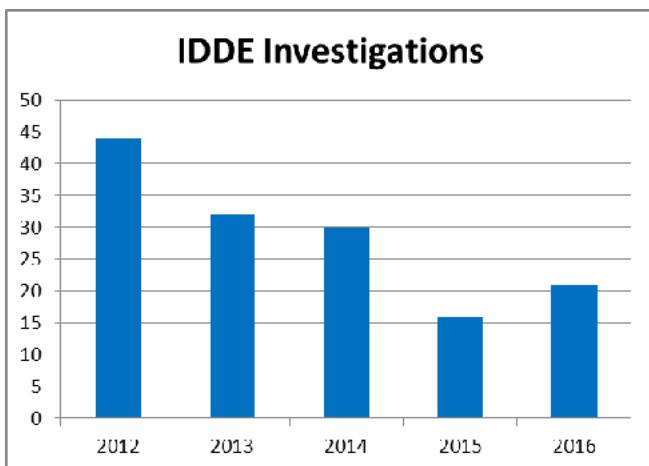
The footing/foundation and roof drains, groundwater drains and irrigation returns do not require yearly inspections or monitoring but are often noted during annual inspections of drainage channels. The City of Cañon City is currently not required to monitor industrial discharge outfalls as these are covered under separate discharge permits; again, these are often noted during other inspections. Two of the outfalls from industrial areas are currently disconnected, but will remain in the database. Outlets are inspected annually with the various BMPs. Outfalls and major outfalls are inspected annually (at a minimum). The outfall database in CarteGraph and the mapping assist in prioritizing inspections and monitoring the outfalls. During 2016, 254 inspections were conducted on outfalls, drains and outlets. The following table shows the breakdown of inspections.

Category	Annual/Routine Inspections	Complaint	Illicit Discharge	Initial	Re-inspection
Facility Outlet	6				
Footing/Foundation Drains	5				
Groundwater Drain	16				
Industrial Discharge	2				
Irrigation Return	53			9	
Major Outfall	17	1			1
Outfall	107			4	
Outlet	21			2	
Roof Drains	4			7	

2. Regulatory Mechanism: The City of Cañon City adopted Ordinance No. 20, Series of 2005 to establish codes concerning illicit discharges. Some minor changes were made to the Ordinance, effective September 9, 2012 through Ordinance No. 14, Series of 2012 AN ORDINANCE MAKING CERTAIN MINOR AMENDMENTS TO THE CITY'S STORMWATER REGULATIONS. The Ordinance can be viewed on the City of Cañon City's website at www.canoncity.org.

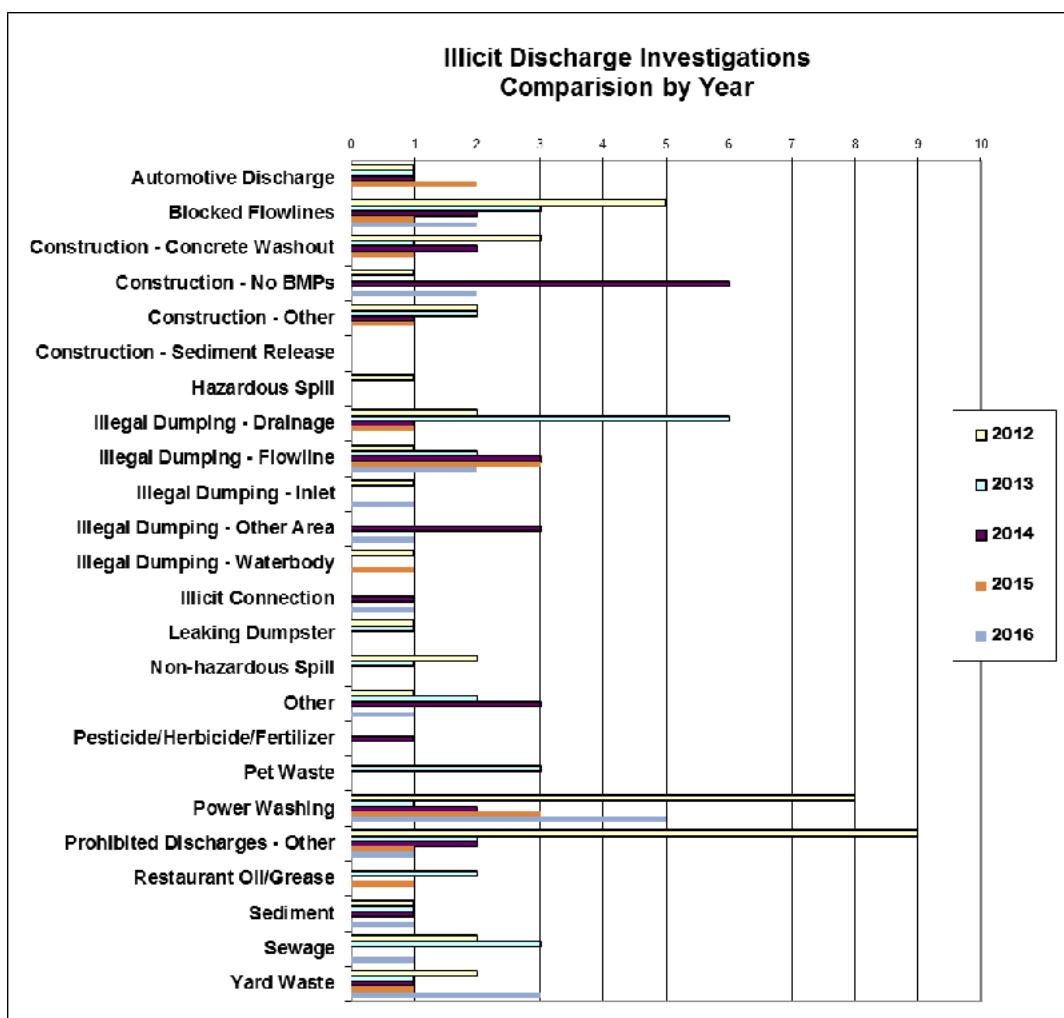
3. Illicit Discharge Detection and Elimination Plan:

Twenty-one incidents of potential illicit discharges were investigated in 2016. Although illicit discharge investigations were slightly higher during 2016 as compared to 2015, overall they have steadily declined since 2012. The following graph on the left portrays the trend. The Contact database in CarteGraph (*See Section 3. Public Participation/Involvement*) assists in tracking how many reports of illicit discharges the Stormwater Program receives from citizens and employees. The following graph on the right shows the reports received from each category as a percentage of the total number of illicit discharge investigations each year



Illicit discharges are assigned a category in the CarteGraph database to assist in identifying types of pollutants which may need targeting through our Public Education program. The following table shows how many investigations for each category were conducted during the year. The accompanying chart compares investigations for each category for the past five years.

Category	Investigations	Category	Investigations
Automotive Discharge	0	Illicit Connection	1
Blocked Flowlines	2	Leaking Dumpster	0
Construction – Concrete Washout	0	Non-hazardous Spill	0
Construction – No BMPs	2	Other	1
Construction – Other	0	Pesticide/Herbicide/Fertilizer	0
Construction – Sediment Release	0	Pet Waste	0
Hazardous Spill	0	Power Washing	5
Illegal Dumping – Drainage	0	Prohibited Discharges – Other	1
Illegal Dumping – Flowline	2	Restaurant Oil/Grease	0
Illegal Dumping – Inlet	1	Sediment	1
Illegal Dumping – Other Area	1	Sewage	1
Illegal Dumping – Waterbody	0	Yard Waste	3



Investigations resulted in the illicit discharge enforcement measures shown in the adjacent graph. Eight of the verbal warnings were given between January and June; the other eight were given between July and December. The two emails were sent between July and December and the enforcement action with a fine occurred after July. All illicit discharges were corrected and cleaned up.

Enforcement Action	Number
Verbal Warning	16
Notice of Non-Compliance	0
Cease & Desist	0
Notice of Violation & Enforcement Action w/ fine	1
Letters detailing violation/corrective action	0
Emails detailing violation/corrective action	2

- A. The database in CarteGraph facilitates tracking of other aspects of illicit discharge reports and investigations such as repeat violators. One was a repeat violator during the year in 2016. Four of those cited had been previously cited for illicit discharges between 2007 and 2015. The CarteGraph database is also linked with ArcMap. Illicit discharge reports are plotted on the map to show areas which may need extra outreach or monitoring.
- B. One water quality sample was taken during 2016 in response to a complaint of standing water in a detention basin. The complainant was concerned the water was contaminated by the Cotter Superfund Site and noted that the wildlife in the area would not drink it. Testing concluded that the standing water was uncontaminated surfaced groundwater. The Superfund site is downstream and in a different sub-watershed than the groundwater. Raccoon, fox and deer prints were observed around the water and birds were observed landing in the water during testing. Benthic macroinvertebrate sampling of the Arkansas River and Four Mile Creek was not conducted in 2016 due to time constraints and budgetary concerns.

4. Staff Education: Illicit Discharge training was held for sixteen new and seasonal Parks, Streets, Water Department and Engineering employees and one Fire Inspector.

Action Items for new permit requirements:

1. Develop written procedures for updating the Storm Sewer Map.
2. Review ordinances/municipal code and revise as necessary. Check for exemptions. Check list of exclusions in ordinances against list in permit. Determine if there are additional exclusions the City of Cañon City would like to submit to CDPHE for consideration and approval. Check ordinances for specific language requiring the removal of an illicit discharge. Review and updates will be completed by the July 1, 2019 deadline.
3. Update the IDDE manual. An update was done in 2012 but is currently on hold pending new and revised permit requirements. Updates will be completed by the January 1, 2018 deadline.
4. Document written procedures for enforcement to ensure consistency. The written procedures must include informal, formal and judicial responses. Revise ordinances if necessary. This will be completed by January 1, 2018.
5. Develop written list of priority areas. This will be completed by January 1, 2018.
6. Revise training to include the priority areas. Update documentation of training to include recordkeeping requirements. This will be completed by January 1, 2018.
7. Review CarteGraph database forms to ensure all requirements are included for recordkeeping. This will be completed by January 1, 2018.
8. The PDD requirements for Illicit Discharge Detection and Elimination will be completed prior to the January 1, 2019 deadline. Once completed, the PDD will be posted on the City's website for public's review and comment.

Section 5. Construction Sites

The Construction Sites Runoff Control area of our Stormwater Management Program is designed to reduce, as much as possible, sediment and other construction-related pollutants from entering our storm sewer system or from being discharged into the Arkansas River, Four Mile Creek and other drainages throughout the city.

Discussion of Elements: All programs listed were ongoing during 2016.

1 - 3. Regulatory and Compliance Mechanisms: Ordinance No. 20, Series of 2005 and the City of Cañon City Grading, Erosion & Sediment Control (GESC) Manual were enacted in 2006. They have proved effective in obtaining compliance for construction site stormwater management.

4. Site Plan Review: The current procedures for site plan review are addressed through the City of Cañon City's Grading, Erosion and Sediment Control Manual and the Subdivision and Development Regulations.

5. Procedures for receipt and consideration of information submitted by the public: A database is kept of all contacts (phone, email, letters and "in person") concerning stormwater issues with the intent to better track the effectiveness of the public education and participation programs. (See Section 2. Public Participation/Involvement). All complaints and concerns are addressed promptly. Any illicit discharge investigations resulting from a complaint or concern submitted by a citizen is logged into the Illicit Discharge database in CarteGraph and can be cross-referenced through the Contact database.

6. Site inspections and enforcement of control measures: Inspections are performed at all applicable construction sites and post-construction sites with appropriate enforcement actions being taken when needed. During 2016, twenty-three inspections were performed. Fifteen were full inspections and eight were reconnaissance inspections. During 2016 there were four active Grading, Erosion and Sediment Control (GESC) permits at four sites. Eight Drainage, Erosion and Sediment Control (DESC) permits were issued during 2016. Fourteen DESC permits were active during 2016, with ten being closed during the year. Due to a clarification in the new permit, after July 1, 2016, DESC permits were no longer required for single family residences being built in subdivisions which have been stabilized. The inspections resulted in the following actions:

Enforcement Action	Number
Verbal Warning	0
Notice of Non-Compliance	5
Cease & Desist	0
Stop Work Order	0
Notice of Violation & Enforcement Action w/ fine	0

A detailed tracking system is in place to assess the number and nature of inspections and actions and to identify repeat violators. There was one repeat violator during 2016.

7. Training and education for construction site operators: This is achieved using the GESC manual and through the plan review process. New information and resources are passed to local contractors and developers when available.

A. Additional Training:

Cañon City again joined forces with the City of Pueblo, the Pueblo County Engineering and Public Works Department and the Pueblo West Metro District to host a Regional Stormwater Seminar on February 10, 2016. The seminar was geared toward contractors, developers and engineers who work throughout the region, as well as municipal employees. Featured topics and speakers were Jeremy Hakes from GH Phipps on challenges in stormwater construction; Todd Griffeth with a Colorado 811

update; Lisa Knerr, CDPHE on the draft MS4 revised general permit; and Tom Gore with Altitude Training Associates on selecting the correct stormwater management controls. The seminar was held at the Colorado State University in Pueblo and attended by ninety people, including organizers, speakers and vendors. The full report is kept with the MS4 permit documentation for 2016.

The new permit, effective July 1, 2016 clarified and expanded upon the previous permit's requirements, including detailed recordkeeping requirements.

Action Items for new permit requirements:

1. Check the municipal code and ordinances for any construction-related exclusions and for compliance with new permit requirements. This will be completed prior to the July 1, 2019 deadline.
2. Create a database to track any permitted exclusions. This will be completed prior to the January 1, 2019 deadline.
3. Update of the GESC Manual to reflect changes revised MS4 Permit. This will be completed prior to the July, 1, 2019 deadline.
3. Review and update, if needed, design standards/criteria. This will be completed prior to the July, 1, 2019 deadline.
4. Review procedures and documentation in regards to site plan requirements, review and recordkeeping. This will be completed prior to the July, 1, 2019 deadline.
5. Review inspection procedures and frequencies. Revise as needed to comply with new permit requirements and document. Review and revise inspection forms, if needed. This will be completed prior to the July, 1, 2019 deadline.
6. Document written procedures for enforcement to ensure consistency. The written procedures must include informal, formal and judicial responses. Revise ordinances if necessary. This will be completed by July 1, 2019.
7. Document training procedures for operators of applicable construction activities and document training. This will be completed prior to the January 1, 2019 deadline.
8. Document procedures for IGAs, MOUs, etc. This will be completed prior to the January 1, 2019 deadline.
9. The PDD requirements for Construction Sites will be completed prior to the January 1, 2019 deadline. Once completed, the PDD will be posted on the City's website for public's review and comment.

Section 6. Post-construction Stormwater Management in New Development and Redevelopment

Per the City of Cañon City's MS4 permit, the Post-construction Stormwater Management program must reduce the stormwater impacts from areas of new development and significant redevelopment as much as possible through planning procedures and enforcement mechanisms.

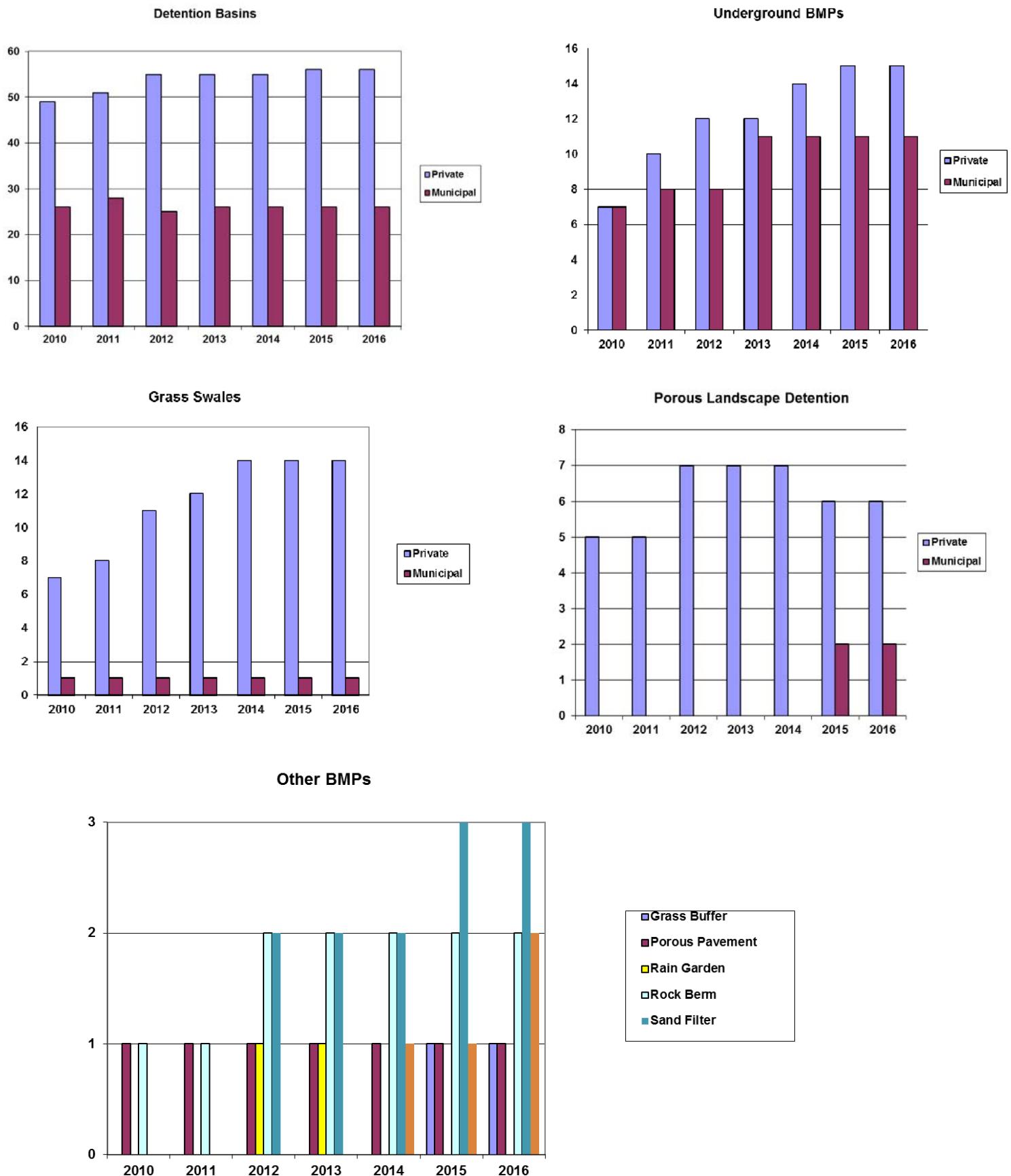
Discussion of Elements: All programs listed were ongoing during 2016.

1 & 5. Regulatory Mechanisms: Ordinance 20, Series of 2005 addresses the requirements for post-construction permanent BMPs including technical standards and specifications, review and approval procedures and the long-term operation and maintenance of the BMPs.

2. & 3. Design Criteria & Standards and Review & Approval Procedures: The site plan review process assures that post-construction structural BMPs meet design standards. Inspections during the construction process and final inspections assure that the BMP has been properly constructed.

4. Tracking: Permanent BMPs are recorded at final inspection, mapped and entered into the CarteGraph database. No new BMPs were implemented in 2016. A sedimentation basin which had been installed in 2009

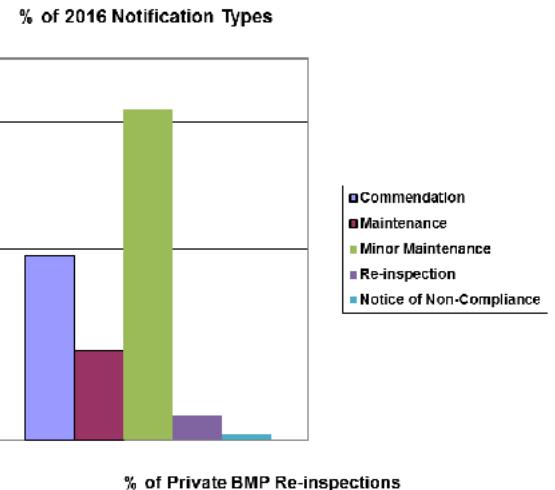
and refurbished in 2016 was added to the database though. The following graphs show the number of private and municipal BMPs inspected each year from 2012 to 2016. Yearly variation in numbers reflects new BMPs added, transfer of jurisdiction from the County to the City, and BMPs removed from service.



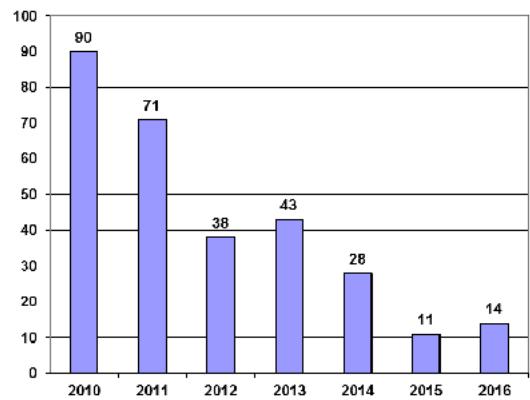
6. Monitor long-term compliance: One hundred forty permanent BMPs, of which ninety-eight are under private custodianship, are inspected at least annually with the results of those inspections entered into the CarteGraph database. An inspection report and letter are sent to the custodian of the private BMPs. The letters fall into the categories of commendation, maintenance or minor maintenance. Minor maintenance letters are sent for those BMPs that need minor, routine maintenance such as trash removal. Recipients of the minor maintenance letters have shown a history of good maintenance and a willingness to respond favorably to past maintenance letters. A follow-up inspection is not done on the BMP. Maintenance letters are sent for those BMPs which need more extensive maintenance. The BMP is then re-inspected approximately 30 days later (depending upon the severity of the problem noted) and enforcement procedures are instituted if the corrective maintenance has not been done. The appropriate department receives the inspection report for municipal BMPs; the report also serves as a work order. During 2016, a total of one hundred fifty-nine inspections were performed on permanent BMPs. The following table shows the breakdown of the inspections.

	Private/Federal/County			Municipal		
	Basins	Storm Vaults	Other BMPs	Basins	Storm Vaults	Other BMPs
Annual	56	15	27	26	11	3
Complaint	0	0	0	3	0	0
Illicit Discharge	0	0	0	0	0	0
Initial	0	0	0	0	0	0
Maintenance	0	0	0	0	0	1
Monitoring	0	0	0	0	0	0
Other	0	0	0	0	0	0
Post-Storm	0	0	0	0	0	0
Re-inspection	8	1	5	3	0	0
Storm	0	0	0	0	0	0

Sixty-seven letters were sent to non-municipal custodians indicating some level of non-compliance (i.e. needing maintenance). Of those, fourteen were maintenance letters and fifty-three were minor maintenance letters. Four letters were sent after a re-inspection revealed the requested maintenance had not been done and one received a Notice of Non-Compliance when the requested maintenance still had not been completed. Thirty of the inspections resulted in letters of commendation being sent to non-municipal custodians. The adjacent graph shows the percentages of types of notifications sent out during 2016.



The adjacent graph shows the trends in re-inspections from 2010 to 2016 for BMPs under private custodianship. Numbers are shown as a percentage of BMPs which needed to be re-inspected after maintenance notices were sent out. Some BMPs were re-inspected more than once depending upon compliance or the time frame needed for completion of requested maintenance. As the graph indicates, re-inspections have declined significantly from 2010. This can be interpreted as more consistent routine maintenance of



the privately owned BMPs, resulting in fewer maintenance letters involving re-inspections.

The new permit expands upon the previous permit's requirements, explicitly detailing requirements for control measures and exclusions.

Action Items for new permit requirements:

1. Create Standard Operating Procedures or other documentation for exclusions. Create database to track required information. This will be completed prior to the July 1, 2019 deadline.
2. Review applicable ordinances and revise if needed. This will be completed prior to the July 1, 2019 deadline.
3. Review ordinances & current procedures concerning control measure design, revise if necessary. Review any manuals/design specifications & revise to meet new requirements. Create SOPs if needed. This will be completed prior to the July 1, 2019 deadline.
4. Review current procedures for site plans. Revise if necessary. Create SOPs if needed. Revise the CarteGraph database if needed or create a new recordkeeping method. This will be completed prior to the July 1, 2019 deadline.
5. Review, revise and document procedures for construction inspection and acceptance. Revise recordkeeping. This will be completed prior to the July 1, 2019 deadline.
6. Review, revise and document procedures for long-term operation, maintenance and post-acceptance oversight. Revise CarteGraph database forms as needed. This will be completed prior to the July 1, 2019 deadline.
7. Review, revise and document procedures for enforcement response. Revise CarteGraph database forms as needed. This will be completed prior to the July 1, 2019 deadline.
8. Document procedures for tracking permanent BMPs. Revise CarteGraph database forms if needed. This will be completed prior to the July 1, 2019 deadline.
9. Document training procedures and revise recordkeeping. This will be completed prior to the July 1, 2019 deadline.
10. Document procedures for IGAs, MOUs, etc. This will be completed prior to the January 1, 2019 deadline.
11. The PDD requirements for Post-construction Stormwater Management will be completed prior to the January 1, 2019 deadline. Once completed, the PDD will be posted on the City's website for public's review and comment.

Section 7. Pollution Prevention/Good Housekeeping For Municipal Operations

The focus of this area of the Stormwater Management Program is to reduce the amount and type of pollution that is generated by municipal operations or from municipally-owned properties to the maximum extent practicable.

Discussion of Elements: All programs listed were ongoing during 2016.

1. Implementation of an Operation & Maintenance program:

All municipally owned facilities (including parks) are inspected annually. The results of the inspections are sent to the appropriate department heads. In 2016, fifty-one facilities were inspected. Four facilities were added to the inspection list. The adjacent table shows the breakdown of facilities by department.

Department	# of Facilities
Stormwater	3
Equipment Repair	1
Parks	31
Streets	1
Water Distribution	1
Water Treatment	14

Channels	Private	Municipal
Annual	27	67
Complaint	0	2
Initial	2	0
Re-inspection	2	1

Approximately 18.7 miles of drainage channels (including those under private custodianship) are also inspected. One hundred one inspections were conducted on the sixty-seven channels under the custodianship of the City of Cañon City and the twenty-nine under private custodianship during 2016. The adjacent chart shows the breakdown for inspection types.

Of the twenty-nine channels under private custodianship, eight received letters of commendation for keeping the channels clean. Fourteen minor maintenance notices and five maintenance notices were sent. One custodian received a second maintenance notice after re-inspection. Maintenance (i.e. mowing, trash clean-up, and post-storm debris and sediment removal) was performed on twenty-two of the municipal channels during 2016.

Storm drains are mapped and categorized as part of our Stormwater Program. A percentage of those are inspected yearly. A total of 1,101 storm drains have been identified and mapped to date. Of these, 690 are under municipal jurisdiction, 99 are under county/state/federal jurisdiction and 312 are under private jurisdiction. Like outfalls, inlets are assigned to a primary category in the CarteGraph database. The categories are Irrigation Box, Irrigation Clean-out, Overflow, Storm Clean-out and Storm Inlet. Irrigation boxes and clean-outs and overflows are only mapped when they have the potential to also receive stormwater runoff or are connected to pipes under City streets. The breakdown for each category as well as the number mapped during 2016 (new, previously identified but unmapped and rebuilt/moved inlets) is detailed in the following table.

Category	Total Number	Number Mapped in 2016
Irrigation Box	1	1
Irrigation Clean-out	224	33
Overflow	15	1
Storm Clean-out	36	4
Storm Inlet	825	23

There were 216 inlet inspections done during 2016. The following table shows the inspections done per category of inlet.

Category	Complaint	Illicit Discharge	Initial	Maintenance	Monitoring	Post Storm	Re-inspection	Routine
Irrigation Box			1	0	0	0	0	0
Irrigation Clean-out	0	0	32	0	0	0	1	16
Overflow	0	0	1	0	0	0	0	1
Storm Clean-out	2	0	2	0	0	0	0	4
Storm Inlet	9	5	21	11	2	4	2	102

Storm manholes are also mapped and categorized as part of our Stormwater Program. A percentage of those are inspected yearly. A total of 199 storm manholes have been identified and mapped to date, but data still needs to be collected for many of them. Of these, 154 are under municipal jurisdiction, 15 are under county/state/federal jurisdiction and 30 are under private jurisdiction. Like outfalls and inlets, manholes are assigned to a primary category in the CarteGraph database. The categories are Combination Irrigation/Storm, Dry Well/Clean-out, Irrigation Clean-out, Storm Manhole, Storm Sump Manhole, Vault Access and Vault Clean-out. The

breakdown for each category as well as the number mapped during 2016 (new, previously identified but unmapped and rebuilt/moved manholes) is detailed in the following table.

Category	Total Number	Number Mapped in 2016
Combination Irrigation/Storm	12	0
Dry Well/Clean-out	4	3
Irrigation Clean-out	14	4
Storm Manhole	164	13
Storm Sump Manhole	1	0
Vault Access	1	0
Vault Clean-out	3	0

There were 19 manhole inspections done during 2016. The following table shows the inspections done per category of manhole.

Category	Hydraulic Analysis	Initial	Monitoring	Routine
Combination Irrigation/Storm	0	0	0	1
Drywell Clean-out	0	1	0	0
Irrigation Clean-out	0	3	0	2
Storm Manhole	1	6	1	3
Storm Sump Manhole	0	0	0	1
Vault Access	0	0	0	0
Vault Clean-out	0	0	0	0

The culverts database was populated during 2015; it currently contains 566 culverts. The City of Cañon City has jurisdiction of 422; 52 are under county/state/federal jurisdiction and 92 are under private jurisdiction. Culverts are divided into two categories based upon the primary type of flow they receive: drainage or irrigation flow. Of the culverts in the database, 391 are classified as drainage and 175 are irrigation. There were 254 inspections conducted on culverts during 2016. The following table shows the number of inspections done in each category.

Category	Complaint	Initial	Maintenance	Re-inspection	Routine
Drainage	0	14	0	0	203
Irrigation	4	0	2	2	29

Data entry into the storm pipe database began in 2016 and will be finished in 2017. Pipes are assigned to a category based on the primary type of flow they carry. The categories are Groundwater, Irrigation, Non-Potable, Potable, Stormwater and Waste. Currently the database contains 1,825 pipes totaling approximately 38.5 miles. Data has been entered for approximately 215 of the pipes.

Stormwater infrastructure projects completed during 2016:

- Reconstruction of the storm system between Myrtle Ln and Ussie Ave
- Replacement of a culvert on E. Main St between Weaver Ln and Orchard Ave
- Replacement of the storm/irrigation system on S. 4th St between Douglas Ave and Centennial Park
- Installation of storm/irrigation system on S. Raynolds Ave between E. Main St and Ute St
- Replacement of culverts on Phelps Ave and installation of a groundwater drain
- Installation of manholes and cleaning of storm drain on Hamilton Rd south of Vine St
- Storm drain improvements on Dozier Ave, Fremont Dr and East US Highway 50
- Installation of storm drain on Orchard Ave north of Central Ave which will be completed in 2017.

- Began development of scope of work and cost estimate for the required analysis and engineering for the two new stormwater properties purchased in 2015.

2. Staff training: A Municipal Pollution Prevention training was held for sixteen new and seasonal Parks, Streets, Water Department and Engineering employees and one Fire Inspector.

The new permit expands upon the requirements of the previous permit, explicitly detailing requirements for control measures and municipal operations. The new permit also contains new requirements for nutrient source reductions and outdoor bulk storage.

Action Items for new permit requirements:

1. Document SOPs for selection, installation, implementation and maintenance of control measures. Prepare Municipal Facility Runoff Control Plans. This will be completed by the July 1, 2017 deadline.
2. Review current SOPs for municipal facilities, revise as necessary. Revise CarteGraph forms as necessary. This will be completed by the July 1, 2017 deadline.
3. Document inspection procedures and revise CarteGraph inspection forms if necessary. This will be completed prior to the July 1, 2019 deadline.
4. Review current SOPs for municipal operations, revise as necessary. This will be completed by the July 1, 2017 deadline.
5. Identify, evaluate and document operations and facilities which have the potential to contribute nutrients to the MS4. Create new or revise existing SOPs and implement control measures as necessary. This will be completed by the July 1, 2020 deadline.
6. Identify sources needing secondary containment, install the containment and document. This will be done prior to the July 1, 2021 deadline.
7. Review training procedures and documentation. Revise as necessary. This will be completed prior to the July 1, 2017 deadline.
8. The PDD requirements for Municipal Pollution Prevention/Good Housekeeping will be completed prior to the January 1, 2019 deadline. Once completed, the PDD will be posted on the City's website for public's review and comment.

Other Trainings, Conferences and Projects:

1. WEF webcast: "Perspectives on Potential Impacts of the Proposed Phase II MS4 General Permit Remand Rule"
2. Hydrology 101 Part I and II webinars
3. Center For Watershed Protection webinar: "Surviving an MS4 Compliance Audit"
4. Hazardous Operations Training
5. Colorado LTAP: "Chemical Safety for Public Works"
6. NACWA Utility Leader Forum and sessions
7. Water Festival Coordinator Workshop
8. Tree planting at the Royal Gorge burn area
9. USGS water quality sampling sites review